FEBS 26178 FEBS Letters 521 (2002) 1–2

Jan's View

Euro-Blues

I often think of Jan. He had always wanted to be a biologist and started out by doing a PhD thesis in microbiology. His postdoctoral work at the biochemistry department of a North American university must have gone well, because his hosts invited him to apply for a faculty position. But Jan wanted to try his luck back home and took a job as 'assistant' at one of his home country's universities. As this position was on soft money and limited to two years, Jan soon switched to a six-year assistantship in another department. Now this position is about to run out and Jan is in a bind. The next steps would be either a 'Habilitation' or an official 'teaching assignment', neither of which would offer him a permanent position or the promise of a professorship. Like so many scientists his age, Jan is lost in the maze of a fuzzy academic career structure. He often wonders whether he should cross the North Atlantic once again, this time for good.

There are three remarkable things about this story. First, it is true – except for Jan's name and perhaps his gender. Second, it is not only about an individual, but also about an entire scientific generation. And third, Jan is European. Swiss, to be exact. If he were French, Belgian, German, Spanish, or whatever, his position would have a different name and different problems, but it would still fit our Mediocre European Science System whose acronym is MESS.

Europe is busy overhauling its creaking universities. The reforms are generally pushed by governments bent on saving money, and smash head-on into academic inertia or outright resistance: the irresistible force meeting the immovable object. Most of the reforms focus on politics, finances, and academic governance. Only rarely do they pay attention to the young academics. And if they do, young academics rank way down the list.

Yet a university is first and foremost about *people*. When will our policy makers wake up to the fact that a uniform, selective and fair academic career structure is *the* most pressing problem of European science?

Top research needs top people. The same goes for teaching, which at a university should always be tied to research. Excellence in research and teaching needs above all creativity. But creativity is not a commodity we can produce at will. We can (and often do) suffocate it in any number of ways, but cannot conjure it up with money, evaluation, or good organization. We cannot generate it at all. Each new generation delivers it to us as a wave of new talent. This talent is our most precious resource. We should prospect for it, mine it diligently, and be careful not to waste it.

It is the young who do most of the research at our universities. Older academics have many other duties and usually cannot spend enough time in the laboratory, the library, or the field. They might set the research goals, discuss results and publications, and run their research team. But the thrill of the new discovery, the *heureka* moment, usually smiles on the young. Not only because they have more time, but also because they are particularly creative. There are, of course, many notable exceptions, but in general the most creative phase of a scientist's life are the early years. It is a phase we should nurture by letting our young scientists follow their own ideas when they are particularly good at having them. We should offer them a career structure that is selective, transparent and fair and that allows them to plan their career with an acceptable degree of risk.

Yet very few European universities offer such a career structure. Returning to Europe after a 'postdoc' overseas can be a descent into a Kafkaesque netherworld of ill-defined positions, inscrutable judges, and scientific dependence. Most early positions are for a fixed term and cannot be extended. When they run out, the scientist may be left out in the cold. Permanent assistantships are worse, because they trap young researchers in a permanent intellectual dependence. Even the last stage in this academic hurdle race can be touch and go. Vacant professorships are all too often filled within the same narrow specialty through murky selection processes, and the successor often turns out to be a former associate of the retiree.

Europe pays a high price for taking such poor care of its young scientists. One price is lower *scientific* innovation. If scientists cannot follow their own ideas when they are most creative, they will produce less new knowledge. Another price is lower *technological* innovation. Putting scientific knowledge to practical use calls for independence, motivation, entrepreneurial vision, and willingness to take risks. In other words, guts. One does not develop guts sitting in lectures or doing experiments a professor wants to have done. One develops them by watching others who have them. Nothing is more important for developing a student's personality than admired role models. Students interact mostly with young assistants. If these have been postdoctoral fellows abroad and now must serve their professor's research, they will be frustrated and hardly inspiring examples. Independence and willingness to take risks are the essence not only of technological innovation, but also of political and administrative innovation. Yet these are the very qualities our academic system selects against.

Some Europeans counter such criticism by pointing to their country's excellent scientific publication record. But this argument misses the point on several counts.

First, some rich countries have papered over their antiquated academic career structure by funding research generously and hiring established foreign stars. Such a policy is good for science, but not good for young scientists. Second, it deprives our students of young role models. Finally, it makes Europe lose the international competition for young scientific talent. If some of our best young scientists leave Europe for the USA, so be it, as long as the opposite is also true. But young stars from top academic institutions overseas rarely accept junior positions at European universities, because these offer such unattractive career prospects. Instead of *exchanging* young talent, we *export* it.

Should Jan decide to become an assistant professor in North America, he would face a system that differs from most European ones in three important ways. First, the assistant professorship is advertised internationally, and applicants

0014-5793/02/$22.00 © 2002 Published by Elsevier Science B.V. on behalf of the Federation of European Biochemical Societies.
PII: S0014-5793(02)02859-4

are screened as rigorously as for a full professorship. Second, the successful candidate receives a written six-year contract guaranteeing independence in applying for research funding and running his or her research group; full participation in most departmental decisions; and only limited teaching duties. Third, research, teaching and academic citizenship are evaluated after five years with the help of experts from around the world. If the result of the evaluation is negative, the assistant professor is given one year to leave the university. If it is positive, the assistant professor is promoted to a permanent professorship without competition with others. It's '*up or out*'.

This 'tenure track' system is tough, yet transparent and fair. Universities in the USA and elsewhere have used it for decades with great success. Like any successful product, though, it constantly fights against cheap imitations. And Europe leads the world in concocting fake tenure track systems. Some of them grant independence, but do not reward successful performance by a promotion. Others burden the young academics with a full teaching load and unrealistically short time limits. Still others call for rigorous selection, but offer permanence right from the start. I sometimes wonder who dreams up these bizarre schemes.

Tenure track only works if the university works: it is a thermometer in the university's mouth. It tells us whether the university has a strong and long-term academic leadership that can plan vacant positions in advance, because for each assistant professor hired today, there must be a vacant permanent position six years down the road. It also tells us whether the university has an efficient selection system, because choosing a young and still little known researcher is much trickier than going for an international star. On these counts, very few European universities have a clean bill of health. Their faculties, God bless them all, are usually too heterogeneous, too inefficient, and too political, and university institutes are too vulnerable to tampering by powerful individuals. Promotion of assistant professors is best handled by well-run, large departments or long-term, independent deans, whose decisions must pass scrutiny by a presidential ad hoc committee. Tenure track also demands that mandatory retirement function properly. If permanent professors refuse to retire, as now often happens in the USA, the system is in grave danger, because influx and outflux must match.

Tenure track does not imply that all permanent professorships are filled through tenure track. Launching a new institute or research initiative, or focussing existing strength, may call for the hiring of an internationally known researcher as a permanent full professor. Tenure track may also be unsuited for some 'small', but important disciplines such as archeology, because these offer so few full professorships. These 'small' fields, as well as disciplines that must teach very large classes, may have to hire some of their assistant professors without tenure track. While such a dichotomy is not ideal, it is at least transparent because candidates would know from the start what they were getting into. A wise university leadership will always aim for a healthy mixture of tenured and untenured faculty.

Where does this leave the other early academic career steps in continental Europe, such as the *maître-assistant*, the *ayudante*, the *maître de conference*, the *Oberassistent*, the *ricercato*, and the *Privatdozent*? Nowhere. Each of these positions has something seriously wrong with it. Each of them is a long and uncertain voyage without a clear path to a permanent professorship. Each of them is a *penured trek*.

Tenure track is no panacea for the many ills of European universities. But it would encourage and reward creativity, and should go a long way in helping young academics to move within Europe. Europe should adopt this system now. If Jan were to leave Europe for North America, he should do so in a spirit of curiosity and adventure, and not because Europe denies him the chances he deserves.

Having grown up to the wail of air raid sirens, Europe's unification has been one of the most inspiring events of my life. I wish I could say the same of Brussels' science policies. They fiddle too much with science, they are too political, and they do not pay enough tribute to excellence and creativity. They spend billions on official network programs and very little on our young scientific talent. They do not think enough of Jan. Europe's scientific prospects tickle me pink and should make others green with envy. But the reality just gives me the blues.

Thanks to my friends Susan M. Gasser and Stuart J. Edelstein for their help.

Gottfried Schatz
Swiss Science and Technology Council,
Bern, Switzerland
E-mail address: gottfried.schatz@unibas.ch

Note from the Editorial Office:

'*Jeff's View*' is a series of invited commentaries from Gottfried Schatz, a distinguished scientist who presently heads the Swiss Science and Technology Council. These articles concern novel developments in biochemistry and molecular cell biology as well as general research and policy issues in the field of life science. Any conclusions or opinions expressed in these commentaries, however, are not necessarily the views of the Federation of European Biochemical Societies (FEBS) or of *FEBS Letters*.